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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.  | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------|------------------|
| 09/779,566   | 02/09/2001  | Takahiro Kumura      | 074273/0181          | 6166             |
| 22428  | 7590        | 06/02/2005           | EXAMINER             |                  |
| FOLEY AND LARDNER<br>SUITE 500<br>3000 K STREET NW<br>WASHINGTON, DC 20007 |             |                      | GHULAMALI, QUTBUDDIN |                  |
|  |             |                      | ART UNIT             | PAPER NUMBER     |
|  |             |                      | 2637                 |                  |

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/779,566

Applicant(s)

KUMURA, TAKAHIRO

Examiner

Qutub Ghulamali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/24/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This office Action is in response to the amendment filed 11/19/2004, is a final office action.
2. The amendment to the abstract of the disclosure is acknowledged and is considered acceptable.
3. Applicant's arguments, see page 10, lines 1-17, filed 11/19/2004, with respect to the rejection(s) of claim(s) 1-14 under 35 U.S.C 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Blakeney, II et al (US Patent 5,490,165).

The reject based on the new art follows:

#### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu (US Patent No. 6,094,449) in view of Blakeney, II et al (US Patent 5,490,165).
6. Consider claims 1, 2, 6-9, 12, Komatsu teaches (fig. 2), a spread spectrum communication synchronization acquisition apparatus comprising;

a plurality (greater than 1) of short-time integration path search units 6 for calculating correlation values from a received signal (i.e., for integrating the power value for the integration time corresponding to the plural slots) and selects higher (larger ones) power values in the magnification order of power per slot from a larger power value to a lower power value by the number of the first correlators 4', a long time integration path search unit 7 for integrating the power value for an integration time longer than that of the short-time integration path search unit 6 by the time corresponding to plural slots and selecting higher power values in the magnification order of power per slot from a higher power value to a lower power value by the number of the first correlators 4', a demodulation path selection unit 8 which selects path (reception) timings from timing data for demodulation in the magnification order of power per slot from timings which are selected by excluding the same timing and adjacent timings thereto in the short-time integration path search unit 6 and the long-time integration path search unit 7, a second correlator 9 for correlating the reception signal and the spread signal at the reception timing for demodulation to obtain a correlation value, and outputs demodulation timing data indicative of path (reception) timings (col. 8, lines 27-67; col. 9, lines 1-8; col. 11, lines 1-42). Komatsu, however, does not disclose a frequency offset estimating section, which estimates frequency offsets of correlation values and power values and demodulation timing data and calculates phase change values from the estimated frequency offsets to output to search section. Blakeney in a similar field of endeavor discloses a frequency offset estimating section, which estimates frequency offsets from one of said correlation values and said power values and demodulation timing data, and calculates said phase change quantities from the estimated frequency offsets to output to said search section (col. 3, lines 1-28; col. 9, lines 47-66). It would

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have been obvious to one of ordinary skill in the art at the time the invention was made to use a frequency offset estimation in correlation values and power values and demodulation timing data as taught by Blakeney in the apparatus of Komatsu because it can mitigate interference to all signals seeking rapid response and provide improvement in the channel performance.

Regarding claims 3, 5, 11, 14, Komatsu teaches a signal converter for converting the received (reception) spread spectrum signal into a baseband signal, a sample and hold circuit for sampling the baseband signal, holding the sampled baseband signal and outputting the sampling signal, a symbol integrator 5, the correlation value is demodulated on the basis of the theoretical value of the symbol corresponding to the correlation value or the judgment value after demodulation, and integrated over plural symbols to obtain a power value, a first correlators 4', a demodulation path selection unit 8 which selects path (reception) timings from timing data for demodulation in the magnification order of power per slot from timings which are selected by excluding the same timing and adjacent timings thereto in the short-time integration path search unit 6 and the long-time integration path search unit 7, a second correlator 9 for correlating the reception signal and the spread signal at the reception timing (abstract; col. 2, lines 63-67; col. 8, lines 27-67; col. 9, lines 1-8; col. 11, lines 1-42).

Regarding claim 4, 10, 13, Komatsu teaches in combination with teachings highlighted above, calculating the power of the integration of the plural symbols, thereby obtaining a power value; a short-time integration path search unit for adding power values over plural slots (i.e., integrating the power value for the integration time corresponding to the plural slots) and selecting higher power values, the number thereof corresponding to the number of the first correlators, in the magnification order of the power per slot from a larger power per slot to a

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lower power per slot; a long-time integration path search unit for adding power values over plural slots whose number is larger by plural slots than that of the short-time integration path search unit (i.e., integrating the power value for an integration time longer than that of the short-time integration path search unit by the time corresponding to plural slots) and selecting higher power values, the number thereof corresponding to the number of the first correlators, in the magnification order of power per slot from a larger power value to a lower power value; a demodulation path selection unit for selecting a reception timing for demodulation (col. 3, lines 5-30).

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patents:

Miura (US Patent 6,628,700) shows CDMA reception method and receive with a plurality of correlators.

Atarius et al (US Patent 6,373,882), discloses a motion estimator for a CDMA mobile station in reducing the power consumed.

Asahara et al (US Patent 6,353,642) shows an automatic frequency controller and demodulation unit.

Subramaniam (US Patent 5,361,276) discloses an all digital ML based spread spectrum receiver.

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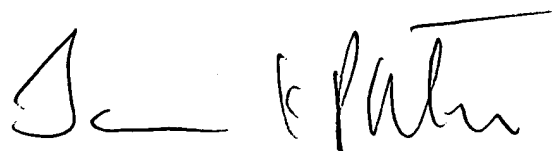
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014.

The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.  
May 31, 2005.

A handwritten signature in black ink, appearing to read "Jay K. Patel", with a horizontal line extending from the end of the signature.

**JAY K. PATEL**  
**SUPERVISORY PATENT EXAMINER**